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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,458	07/27/2001	Sandra Gail Biedron	ANL-IN-01-051	8738

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EXAMINER

WARREN, MATTHEW E

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 02/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/916,458

Applicant(s)

BIEDRON ET AL.

Examiner

Matthew E. Warren

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5 and 18 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 6-17 and 19-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 11 is objected to because of the following informalities: claim 11 contains the limitations of "said *predefined* nonlinear..." and "said *high-gain harmonic generation* (HGHG) *module*..." Those limitations lack sufficient antecedent basis in the claims. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Nation et al. (US 4,835,446).

In re claim 1, Nation et al. discloses (figs. 1 and 9 and col. 5, line 49 – col. 6, line 54) a method for implementing a next generation synchrotron light source comprising the steps of: providing first electron beam source modules (12) for producing a first electron beam (14), providing initial electron beam source modules (26) for producing multiple harmonic wavelength photons, and combining said multiple harmonic wavelength photons with said first electron beam (col. 5, line 66-col. 6, line10). The method further comprises providing selected radiation production modules (16) for

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generating fundamental and nonlinear harmonics of said combined electron beam to be used as the next generation synchrotron light source or as a coherent seed for additional selected modules (24) & (col. 5, lines 59-63).

In re claim 2, Nation et al. discloses (fig. 9 and col. 17, 24-47) a method for implementing a next generation synchrotron light source as recited in claim 1 wherein the step of providing initial electron beam source modules for producing multiple harmonic wavelength photons includes the steps of providing an electron gun (12) and an accelerating structure (90) for producing an electron beam, said accelerating structure receiving emitted electrons from said electron gun and raising electron beam energy.

In re claim 18, Nation et al. shows (fig. 1) a modular system for implementing a next generation synchrotron light source comprising: first electron beam source modules (12) for producing a first electron beam (14), initial electron beam source modules (26) for producing multiple harmonic wavelength photons, and a mixer (30 and 32, col. 6, lines 2-10) for combining said multiple harmonic wavelength photons with said first electron beam. The system includes radiation production modules (16) for generating fundamental and nonlinear harmonics of said combined electron beam to be used as the next generation synchrotron light source or as a coherent seed for additional selected modules (24) & (col. 5, lines 59-63).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nation et al. (US 4,835,446) as applied to claim 1 above, and further in view of Bennett (US Pub. 2002/0044573 A1).

In re claim 5, Nation et al. discloses (fig. 9 and col. 17, 24-47) method for implementing a next generation synchrotron light source as recited in claim 1 wherein the step of providing first electron beam source modules for producing said first electron beam includes the steps of providing an electron gun (12) and an electron accelerating structure (90) coupled to said electron gun. Nation does not disclose an electron bunch compressor coupled to said electron accelerating structure for producing said first electron beam, which Bennett discloses (paragraph [0021]) to reduce the electron bunch length in FEL system. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the step of providing first electron beam source modules as taught by Nation by also providing a bunch compressor as taught by Bennett to reduce the electron bunch length.

Allowable Subject Matter

Claims 3, 4, 6-10, 12-17, and 19-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Madey et al. (US 6,636,534 B2), Sprangle et al. (US 6,137,811), Yamada (US 5,117,431), and Schoen (US 4,466,101) also disclose FEL's and synchrotron systems.

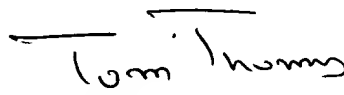
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Warren whose telephone number is (571) 272-1737. The examiner can normally be reached on Mon-Thurs, and alternating Fri, 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MEW
MEW
February 6, 2004


Tom Thumy
Supervisory Patent Examiner
February 6, 2004